

SEQUENCE LISTING

<110> KIRIN BEER KABUSHIKI KAISHA

<120> Method for Modifying Chromosomes

<130>

<140>

<141>

<150> JP 10-236169

<151> 1998-08-21

<160> 108

<170> PatentIn Ver. 2.0

<210> 1

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 1

tggaagggtgg ataacgccct

20

<210> 2

<211> 22

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 2

tcattctcct ccaacattag ca

22

<210> 3

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 3

gcaatcggtc tgccggaaga

20

<210> 4

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 4

ttggatcact ttggacccag

20

<210> 5

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 5

ctctcctgca gggccagtca

20

<210> 6

<211> 22

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 6

tgctgatggt gagagtgaac tc

22

<210> 7

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 7

agtcagggca ttagcagtgc

20

<210> 8

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 8

gctgctgatg gtgagagtga

20

<210> 9

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 9

tggtggctga aagctaagaa

20

<210> 10

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 10

ccagaagaat ggtgtcatta

20

<210> 11

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 11

tccaggttct gcagagcaag

20

<210> 12

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 12

tgtagttgga ggccatgtcc

20

<210> 13

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 13

ccccacccat gatccagtac

20

<210> 14

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 14

gccctcagaa gacgaagcag

20

<210> 15

<211> 22

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 15

gagagttgca gaaggggtga ct

22

<210> 16

<211> 22

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 16

ggagaccacc aaaccctcca aa

22

<210> 17

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 17

ggctatgggg acctgggctg

20

<210> 18

<211> 22

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 18

cagagacaca ggcacgtaga ag

22

<210> 19

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 19

ttaagggtca cccagagact

20

<210> 20

<211> 20
<212> DNA
<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 20
tgtagttgga ggccatgtcc 20

<210> 21
<211> 20
<212> DNA
<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 21
caaaaagtcc aaccctatca 20

<210> 22
<211> 20
<212> DNA
<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 22
gccctcagaa gacgaagcag 20

<210> 23
<211> 20
<212> DNA
<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 23

tcgttcctgt cgaggatgaa

20

<210> 24

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 24

tcactccgaa gctgcctttc

20

<210> 25

<211> 21

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 25

atgtacagga tgcaactcct g

21

<210> 26

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 26

tcatctgtaa atccagcagt

20

<210> 27
<211> 20
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 27
gatcccatcg cagctaccgc 20

<210> 28
<211> 20
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 28
ttcgccgagt agtcgcacgg 20

<210> 29
<211> 22
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 29
gatgaactag tccaggtgag tt 22

<210> 30
<211> 22
<212> DNA
<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 30

ccttttggt tctactcctt ca

22

<210> 31

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 31

atagagggtta cccactctgg

20

<210> 32

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 32

aaccaggtag gttgatatgg

20

<210> 33

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 33

aagttcctgt gatgtcaagc

20

<210> 34
<211> 20
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 34
tcatgagcag attaaacccg 20

<210> 35
<211> 20
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 35
tgtgaaggag gaccaggtgt 20

<210> 36
<211> 20
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 36
tgtaggggtt gacagtgaca 20

<210> 37
<211> 20
<212> DNA
<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 37

ctgagagatg cctctggtgc

20

<210> 38

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 38

ggcggttagt ggggtcttca

20

<210> 39

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 39

ggtgtcgtgg aactcaggcg

20

<210> 40

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 40

ctggtgcagg acggtgagga

20

<210> 41

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 41

gcacccctgac cgtgtccgaa

20

<210> 42

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 42

gggtcagtag caggtgccag

20

<210> 43

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 43

agtgagataa gcagtggatg

20

<210> 44

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 44

gttgtgtctac tcccatcact

20

<210> 45

<211> 21

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 45

ttgtatttcc aggagaaagt g

21

<210> 46

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 46

ggagacgagg gggaaaaggg

20

<210> 47

<211> 27

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 47
atggactgga cctggaggrt cytctkc 27

<210> 48
<211> 27
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 48
atggagyttg ggctgasctg gstt tyt 27

<210> 49
<211> 27
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 49
atgrammwac tktgkwbcwy sctyctg 27

<210> 50
<211> 20
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 50
cagaggcagt tccagatttc 20

<210> 51
<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 51

tgggatagaa gttattcagc

20

<210> 52

<211> 27

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 52

atggacatgr rrdycchvgy kcasctt

27

<210> 53

<211> 28

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 53

ccaagcttca ggagaaagtg atggagtc

28

<210> 54

<211> 28

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 54
ccaagcttag gcagccaacg gccacgct 28

<210> 55
<211> 28
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 55
ccaagcttca gaggcagttc cagatttc 28

<210> 56
<211> 28
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 56
gggaattcgg gtagaagtca ctgatcag 28

<210> 57
<211> 28
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 57
gggaattcgg gtagaagtca cttatgag 28

<210> 58

<211> 28

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 58

gggaattcgg gtagaagtca cttacgag

28

<210> 59

<211> 60

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Probe

<400> 59

accttcatcg tcctcttctt cctgagcctc ttctacagca ccaccgtcac cctgttcaag 60

<210> 60

<211> 60

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Probe

<400> 60

tgatgctgca ccaactgtat ccatcttccc accatccagt gagcagttaa catctggagg 60

<210> 61

<211> 22

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 61

ctggggtgag ccgatgttt tg

22

<210> 62

<211> 22

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 62

ccaaccagc tcagcccagt tc

22

<210> 63

<211> 36

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 63

aattcccgcg ggtcgacgga tccctcgagg gtacca

36

<210> 64

<211> 36

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 64

gggcgcccag ctgcctaggg agctcccatg gttcga

36

<210> 65
<211> 33
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 65
tcgaactagt aggagaagtg aacttgagga ggc 33

<210> 66
<211> 31
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 66
tcgaactagt gattcagtga tgctgtgcag g 31

<210> 67
<211> 22
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 67
gagagttgca gaaggggtga ct 22

<210> 68
<211> 22
<212> DNA
<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 68

ggagaccacc aaaccctcca aa

22

<210> 69

<211> 24

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 69

gagctgcaag aactcttcct cacg

24

<210> 70

<211> 28

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 70

atgactctaa ggcaggaaca tctgtacc

28

<210> 71

<211> 20

<212> DNA

<212> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 71

ctgcgtgtgt aatcgtgtcc

20

<210> 72
<211> 20
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 72
tctgctgtga gtgaacctgc 20

<210> 73
<211> 20
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 73
aggaggcacc ttggataagc 20

<210> 74
<211> 22
<212> DNA
<212> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 74
tcactctgac ccacgataca gc 22

<210> 75
<211> 13
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Sfi I linker

<400> 75

ggccgcwgcg gcc

13

<210> 76

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 76

tcgaggtacc gtgagaacaa gacagagaat gagggagg

38

<210> 77

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 77

tcgaggtacc taatgcagag gctcttttgt gtacttgg

38

<210> 78

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 78

tcgagaattc agtagctggc actatctttt tggccatc

38

<210> 79

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 79

tcgagaattc ggagaaagaa cacacaagga ctcggtc

37

<210> 80

<211> 8

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 80

gcccgggc

8

<210> 81

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 81

tcgaggatcc gatagagaga ttgtcttaaa tgggtggg

38

<210> 82

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 82

tcgaggatcc aacagctgga actcataaaa gcatagc

37

<210> 83

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 83

tcgaggatcc cttagtgaa ggcaaaggaa gggacactc

39

<210> 84

<211> 39

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 84

tcgaggatcc tgtaaagggg tagcctgtcc tctttcatg

39

<210> 85

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 85
cacatgacaa gagctcagcg 20

<210> 86
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 86
tctgacttcc tcatgagagc c 21

<210> 87
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 87
tggatgtatc ctgtcaagag acc 23

<210> 88
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 88
cagacactct atgcctgtgt gg 22

<210> 89
<211> 22

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 89
gccctcatgg aaatctcctg gg 22

<210> 90
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 90
gcagcaacag atggaaggcc tc 22

<210> 91
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 91
gaacagaaag ccactcttgc tttccat 27

<210> 92
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 92
accgagctgc aagaactcctt cctcac 26

<210> 93
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 93
ctctcctgca gggccagtca 20

<210> 94
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 94
tgctgatggt gagagtgaac tc 22

<210> 95
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 95
tggaaggtgg ataacgccct 20

<210> 96

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 96

tcattctcct ccaacattag ca

22

<210> 97

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 97

tcctcttttt ccttccttg cctc

24

<210> 98

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 98

attatttttg gcgttgctg g

21

<210> 99

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 99

agtgagataa gcagtggatg

20

<210> 100

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 100

gttgtgctac tcccatcact

20

<210> 101

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 101

gagagttgca gaaggggtga ct

22

<210> 102

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 102

ggagaccacc aaaccctcca aa

22

<210> 103
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 103
atagcagctt tgctccttcg 20

<210> 104
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 104
ttctctcctg cacatagccc 20

<210> 105
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:Primer

<400> 105
agtgagataa gcagtggatg 20

<210> 106
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 106

gttgtgctac tcccatcact

20

<210> 107

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 107

tggaaggtgg ataacgccct

20

<210> 108

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Primer

<400> 108

tcattctcct ccaacattag ca

22